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IS 5612 (Part 1) (1977, Reaffirmed 1997): Specification for Hose-Clamps and Hose-Bandages for Fire Brigade Use, Part 2: Hose-Clamps (First Revision). UDC 614.843.2 : 621.643.44



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IS : 5612 (Part 1) - 1977
(Reaffirmed 1997)

Indian Standard

SPECIFICATION FOR
HOSE-CLAMPS AND HOSE-BANDAGES
FOR FIRE BRIGADE USE

PART 1 HOSE-CLAMPS

(First Revision)

Second Reprint SEPTEMBER 1999
(Incorporating Amendment No. 1)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR HOSE-CLAMPS AND HOSE-BANDAGES FOR FIRE BRIGADE USE

PART I HOSE-CLAMPS

(First Revision)

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IS: 5612 (Part I) - 1977

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Indian Standard
**SPECIFICATION FOR
HOSE-CLAMPS AND HOSE-BANDAGES
FOR FIRE BRIGADE USE**

PART I HOSE-CLAMPS

(First Revision)

0. FOREWORD

0.1 This Indian Standard (Part I) (First Revision) was adopted by the Indian Standards Institution on 25 April 1977, after the draft finalized by the Fire Fighting Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Occasionally, during fire fight operations, a leak develops in the hose. The leak, if not attended to promptly, may result in serious damage to the hose or even in a burst hose. Changing the hose length involves interruption in fire fighting operations. The leak is, therefore, temporarily stopped by means of a hose-clamp or a hose-bandage applied to the hose. This standard which was published in 1969 is being issued in two parts so as to keep the requirements of hose-clamps and hose-bandages separately. Opportunity has also been taken to update their requirements.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard (Part I) lays down the requirements regarding materials, shape and dimensions, workmanship and finish, and testing of hose-clamps for fire hoses of sizes 50, 63 and 70 mm.

*Rules for rounding off numerical values (revised).

2. TYPES

2.1 The hose-clamps shall be of two types, Type A made of aluminium alloy sheet and Type B of flax canvas.

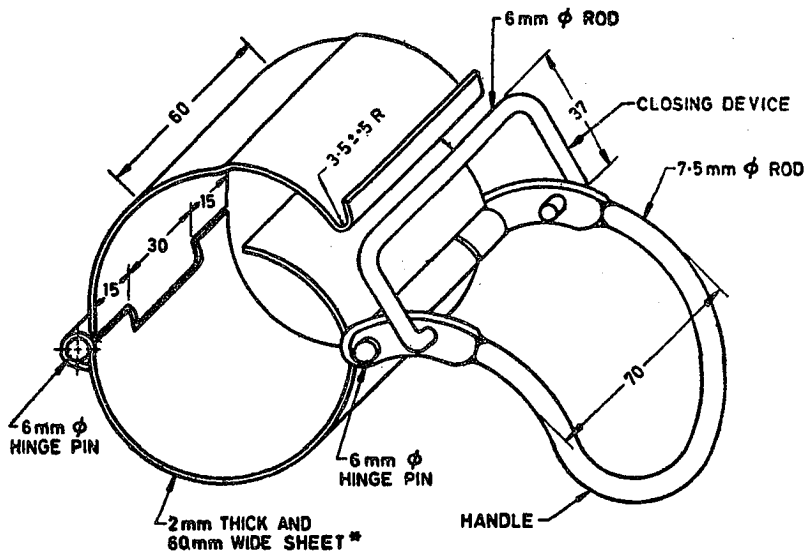
3. GENERAL

3.1 Type A shall have the following components (*see* Fig. 1):

- a) Sheet in three sections, hinged at two points;
- b) Closing mechanism; and
- c) Quick release device.

3.2 Type B shall have the following components (*see* Fig. 2):

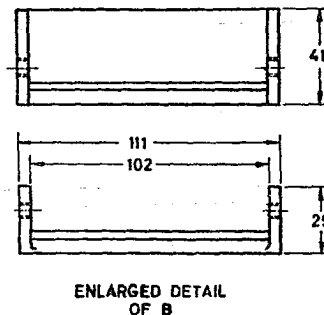
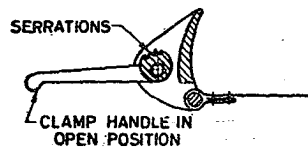
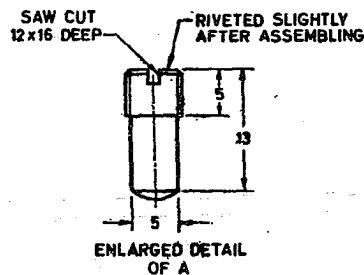
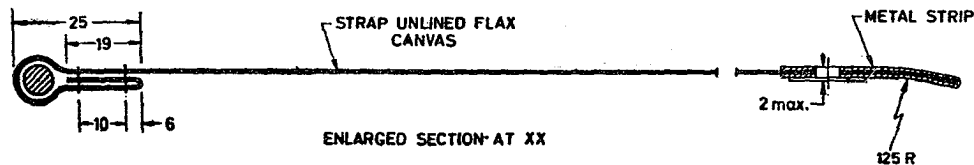
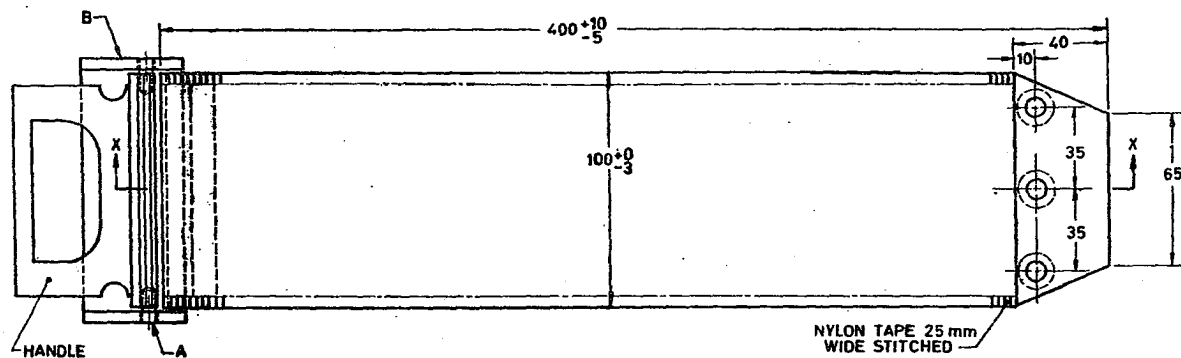
- a) Casting,
- b) Handle, and
- c) Strap with metal strip.



All dimensions in millimetres.

*NOTE — The length of the sheet, with tolerance of ± 2 mm, shall be such that when in closed position the inner diameter shall correspond to size of hose.

FIG. 1 DETAILS OF HOSE-CLAMP, TYPE A



All dimensions in millimetres.

FIG. 2 HOSE-CLAMP, TYPE B

4. MATERIAL

4.1 Aluminium Alloy Sheets — Aluminium alloy sheets used for Type A and for binding end of canvas in Type B shall conform to IS : 737-1974*.

4.2 Aluminium Alloy Rods — Aluminium alloy rods used for hose-clamps Type A shall conform to IS : 733-1975†.

4.3 Aluminium Alloys Casting — Aluminium alloys used for castings for Type B shall conform to IS designation 4450 (A-8-WP) of IS : 617-1975‡.

4.4 Copper Alloys Casting — Copper alloys used for castings for Type B shall conform to the requirements given below:

a) *Sand Castings* — Grade 2 of IS : 318-1962§
Grade 3 of IS : 304-1961||

b) *Die Castings* — Grade 3 of IS : 292-1961¶

4.5 Copper Strips — Copper strips used for binding the end of canvas in Type B shall conform to Grade 1 of IS : 1550-1967**.

4.6 Unlined Flax Canvas — Unlined flax canvas used for hose-clamps Type B shall be 800 g/m² canvas, unlined.

4.7 Nylon Tape — Nylon tape used for binding the edges shall conform to IS : 4228-1967††.

5. SHAPE AND DIMENSIONS

5.1 Type A shall be of the shape and dimensions indicated in Fig. 1 and Type B as in Fig. 2.

6. WORKMANSHIP AND FINISH

6.1 The forgings shall be free from seams, cracks and surface defects. All sharp edges shall be rounded. The castings shall be free from blow holes and other defects.

*Specification for wrought aluminium and aluminium alloys, sheet and strip (for general engineering purposes) (*second revision*).

†Specification for wrought aluminium and aluminium alloys, bars, rods and sections (for general engineering purposes) (*second revision*).

‡Specification for aluminium and aluminium alloys, ingots and castings for general engineering purposes (*first revision*).

§Specification for leaded tin bronze ingots and castings (*revised*).

||Specification for high tensile brass ingots and castings (*revised*).

¶Specification for brass ingots and castings (*revised*).

**Specification for copper sheet and strip for utensils and for general purposes (*first revision*).

††Specification for nylon tapes for aeronautical purposes.

6.2 All metal surfaces shall be finished natural bright.

7. REQUIREMENTS FOR LEAKAGE

7.1 Hose-clamp Type A shall be applied over a hole in a delivery hose of appropriate size through which water shall be passed at a pressure of 70 N/cm^2 (7 kgf/cm^2). The size of the hole shall be not less than 3 mm diameter. The clamp shall be retained in this position for 5 minutes. There shall be no leakage of water through the hose-clamp. The clamp shall neither be loose nor shall bite into the hose fabric. Any seepage of water through the sides shall, however, be ignored.

7.1.1 The test shall be repeated by shifting the position of the clamp (see 10).

7.2 Hose-clamp Type B shall be applied over a 3-mm hole in a delivery hose pressurized at 70 N/cm^2 (7 kgf/cm^2) for 5 minutes. The clamp shall retain the canvas strap in position without getting loose and no leakage shall take place through the strap. Any seepage of water through the sides shall, however, be ignored.

7.2.1 The test shall be repeated by shifting the position of the clamp (see 10).

8. MARKING

8.1 Each hose-clamp shall be clearly and permanently marked with the following information:

- a) Manufacturer's name or trade-mark,
- b) Year of manufacture, and
- c) Size of hose for which it is intended.

8.2 The product may also be marked with Standard mark.

8.3 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

9. PACKING

9.1 Each hose-clamp, Type A, shall be individually packed in a corrugated board carton after being enclosed in a shroud of cellophane.

9.2 Each hose-clamp, Type B, shall be enclosed individually in a shroud of cellophane and then packed, six to a carton of corrugated board.

10. SAMPLING AND CRITERIA FOR CONFORMITY

10.1 The details of sampling and criteria for conformity shall be as given in Appendix A.

APPENDIX A

(Clause 10)

SAMPLING AND CRITERIA FOR CONFORMITY

A-1. SCALE OF SAMPLING

A-1.1 Lot— In any consignment hose-clamps of each type and size produced under similar conditions of manufacture shall be separated into groups of 50 or less and each such group shall constitute a lot.

A-1.2 Tests for the determination of conformity of a lot to the requirements of the standard shall be carried out for each lot separately. The number to be selected for this purpose shall be in accordance with col 1 and 2 of Table 1.

TABLE 1 SCALE OF SAMPLING

LOT SIZE	SAMPLE SIZE	PERMISSIBLE NUMBER OF DEFECTIVES
(1)	(2)	(3)
Up to 8	All	0
9 „ 15	8	0
16 „ 25	13	0
26 „ 50	20	1

A-1.3 The required number of hose-clamps shall be selected at random from the lot. For the purpose, suitable random number tables shall be used.

A-2. DETAILS OF TESTS AND CRITERIA FOR CONFORMITY

A-2.1 The hose-clamps selected according to A-1.2 shall be inspected visually for shape and dimensions (*see 5*), workmanship and finish (*see 6*), and leakage (*see 7*). Any clamp found to be unsatisfactory with regard to one or more of these characteristics shall be considered as defective piece.

A-2.1.1 If the number of defectives found is not greater than the corresponding number of defectives given in col 3 of Table 1 the lot shall be declared as conforming to the requirements of this specification.

(Continued from page 2)

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